Timex Sinclair User Group
NEWSLETTER

Ottawa/Hull Chapter

Editor-Alan Moore February 1986 Vol:3 Issue:2

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MEETINGS

LOCATION: All meetings are held at the NRC bldg., 100 Sussex Dr Ottawa. Check with security when signing in for room #.

TIME: Meetings are held at 8:00 p.m. the last Thursday of each month unless otherwise posted.

FORMAT: Meetings follow this general format:
1)-President's Address and Introduction of new members.
2)-Software Review (max 20 min)
3)-Hardware RevieW (max 20 min)
4)-Adjournment of formal part of meeting.
5)-Informal: Members discuss common problems, swap programs, exchange info/tips, etc........

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MAILING ADDRESS

PLEASE ADDRESS ALL CORRESPONDANCE TO:

The Editor
OHTSUG
1268 Maitland Ave.
Ottawa, Ontario
Canada
K2C 2C6

FROM: THE EDITOR

Well hello again, its been a few meetings since the last newsletter and time to put some of the info in print again.

There have been quite a few items demonstrated since the last printing, reviews of some of the items appear in this edition of the newsletter.

As you may have already noted there is a slight change in the look of the newsletter due to the fact that I have recently purchased a C.ITOH "ProWriter" printer along with a Tasman parallel printer interface, a review of both is found later on in the newsletter. This now allows for a more flexible format to the newsletter as well as some more easily produced print fonts to add a little flair to the look of the newsletter.

There is a point that I wish to raise about the newsletter that you may already be aware of.
It is that we need input from you folks out there. Whether it is a review of a product or a question or answer **PLEASE** put it in writing or on a Tasword II data file and send it in to the Editor (don't wait for the next meeting as sometimes it will be too late for inclusion in the newsletter). One of the problems is that there is not always enough input to print a newsletter, or would you want a two or three single page newsletter published? Another problem is some of the members who have been attending the meetings from the begining of the users group do not give any input other than showing up at the meetings, while other members are consistantly submitting articles for the newsletter or bringing in something to the meetings to give the other members a demonstration of, be it software or hardware. Also we can not always ask the reps to continually keep wracking their brains for something new each month.

So please don't be afraid to send in an article or (heaven forbid) volunteer to do a hardware or software review at one of the monthly meetings. Who knows you may even get to like speaking out or seeing your work in print. Do not think that you need to be an expert on anything to have an article printed. I know that a lot of the members have been generous to submit programs to the groups tape library, it would also be nice if they could send a program listing to the newsletter for all those members who can not get in to some of the meetings so that by publishing it they could also enter it themselves and there by build up their program collection. They may find a nifty little piece of programing embedded in your program.

Do not worry if it seems to be a too small an article to be submitted to the newsletter. It is better to receive a little article than to receive none at all. So please do send in your article(s) today. It would make my job as editor be much more enjoyable.

See you at the next meeting,
The Editor

FASTER CASSETTE SAVING FOR THE ZX

Bill Turnbull

The ZX81/TS1000 cassette SAVE and LOAD routines operate at the relatively leisurely rate of about 300 bits per second. By way of contrast, the TS2068 transfers data some four times faster - making tape storage a more palatable experience. The routines provided here are not that fast - they achieve a bit over 600 bits per second - but represent enough of an improvement to be interesting.

Space does not permit a detailed explanation of how the following machine code routines operate. An annotated Z80ASM assembler listing and set of notes is available through the Group for those who want to dig deeper.

The really useful stuff is the code given in BASIC LISTING 1. Make a REM statement capable of holding at least 216 bytes and poke in the code values starting at address 16516. The listing suggests making up the REM using seven alternating bars of 32 characters each. That's a few more spaces than you'll need but it's quick and easy to enter in FAST mode.

Poking 118 into the two locations after the REM token simply makes the REM garbage disappear from listings. It also louses up the normal LIST command so skip same unless you're familiar with POKING line numbers into locations 16419-20 which control "page breaks" when LISTing.

Delete the loader lines and SAVE your REM to tape using a normal SAVE operation. You can now use this routine as the opening line of any program and invoke a 600 BAUD SAVE via a RAND USR 16516. To load a program saved in this manner, invoke RAND USR 16620.

It gets better. If you append BASIC LISTING 2, you can relocate the code to any place in RAM and it will work. Also, it will recalculate the entry point addresses and display them for you. SAVE this before use, again via a normal SAVE so that you can reload it from a cold startup.

If you want to put the routines above RAMTOP, reset RAMTOP and execute a NEW before reloading and relocating the code. This step is required to relocate the CPU stack normally resident at the top of RAM. Overwriting it guarantees a crash! For an enhancement at some future time we could consider adding a machine code subroutine which repositions the stack without a NEW.

It gets better still. Whereas the ROM SAVE only saves entire programs, the routines provided here allow you to SAVE any arbitrary block of code. The LOAD segment will automatically put it back where it came from since SAVE cleverly sends the required addresses to tape after it sends some check bytes at the start. You must, however, POKE the start of data address into locations 16723,4 (if not relocated) and the end of data address into locations 16725,6 and then execute RAND USR 16519. LOAD remains unchanged. Remember that addresses must be POKED with the least significant byte coming first (LSB/MSB).

If the SAVE/LOAD routines are used from a REM statement within a program, they must always be in the same place - the first line really. That is because they will be overwritten during a program LOAD. The code cannot be changing while it is executing or a crash will ensue.

There is nothing wrong with always using the REM line as Line 1 of a program unless it is competing for space with other routines. When you have a commercial machine code program that goes above RAMTOP, you really want to have your SAVE/LOAD lower in memory. I load my 7K Assembler directly above RAMTOP in about 90 seconds using this program from a REM. Folks with 64K packs can stuff the routines into the 8192-16392 block where it is safe from most things.

Note that our 600 BAUD SAVE/LOAD is only compatible with itself. While it is just a rework of the ROM routines, the timing is quite different and it always looks for a fixed pattern of check bytes as a program "name". Similarly, the ROM LOAD is too slow to keep up with this little devil. So you have to be able to install the program via a normal LOAD before you can use it to LOAD programs previously saved at its higher data transmission rate.

BASIC LISTING 1:

DECIMAL CODE FOR SAVE/LOAD

```
205  70  65 205  35  15  17   1
255 205  70  15  48  85  27 122
179  32 246  33  87  65 205 185
 64 203 126  35  40 248  33  83
[illegible]  22   4 205 185  64  35  21
[illegible] 249  42  83  65 205 185  64
[illegible] 221  64  24 248  94  55 203
[illegible] 200 159 230   5 198   4  79
211 255   6  20  16 254 219 254
 31  48  24   6  15  15 254  13
 32 238 167   6 150  16 254  24
222  35 235  42  85  65  55 237
 82 235 205 205  43  15 225 201
205  35  15 205 244  64  24 251
 14   1 219 254 211 255  31  48
234  23  23  55  42  16 243 241
 33  87  65 205 244  64 121 190
 32 225  35  23  48 245  33  83
 55  22   4 205 244  64 113  35
 21  32 248  42  83  65 205 244
 64 113 205 221  64  24 247  30
  0   6  26  28 219 254  23  55
248  16 248  62  80 167  48 186
203 123  32   1  83 203  17  48
177 201  33   9  64  34  83  65
 42  20  64  34  85  65 201   0
  0   0   0  34  28 156
```

214 BYTES

```
   1 REM [illegible]
   2 FOR N=16516 TO 16729
   3 INPUT B
   4 POKE N,B
   5 NEXT N
   6 POKE 16514,118
   7 POKE 16515,118
```

BASIC LISTING 2

```
   1 REM
  10>REM 600 RELOCATABLE
  20 PRINT AT 2,0;"600 BAUD RELO
CATABLE SAVE/LOAD"
  30 PRINT AT 4,0;"ENTER NEW ADD
RESS->";
  40 INPUT NA
  50 PRINT NA
  60 LET AO=NA-16516
  70 FAST
  80 FOR N=16516 TO 16729
  90 POKE N+AO,PEEK N
 100 NEXT N
 110 LET D$="16517,16536,16539,1
6547,16552,16559,16562,16565,166
08,16624,16645,16648,16659,16664
,16672,16675,16679,16714,16720"
 120 FOR N=1 TO LEN D$ STEP 6
 130 LET R=VAL D$(N TO N+4)+AO
 140 LET O=PEEK R+256*PEEK (R+1)
 150 LET O=O+AO
 160 LET H=INT (O/256)
 170 LET L=O-256*H
 180 POKE R,L
 190 POKE R+1,H
 200 NEXT N
 210 SLOW
 230 PRINT AT 8,0;
 240 PRINT "SAVE PROGRAM",16516+
     AO
 250 PRINT "SAVE DATA",16519+AO
 260 PRINT "LOAD",16620+AO
 270 PRINT "START DATA",16723+AO
 280 PRINT "END DATA",16725+AO
 290 STOP
 300 SAVE "600"
 310 RUN
```

SAMPLE SCREEN:

```
600 BAUD RELOCATABLE SAVE/LOAD

ENTER NEW ADDRESS->16516


SAVE PROGRAM     16516
SAVE DATA        16519
LOAD             16620
START DATA       16723
END DATA         16725
```

FOUR WAY SCROLL

THIS PROGRAM ALLOWS YOU TO SCROLL IN EITHER OF FOUR DIRECTIONS. THIS PROGRAM HAS NO WRAP AROUND FEATURE. THE PROGRAM IS DESIGNED FOR THE ZX81. THE PROGRAM IS COMPLETELY RELOCATABLE. BEFORE RUNNING THE PROGRAM YOU OUGHT TO LOWER RAMTOP TO 30000 BY DOING THE FOLLOWING THREE COMMANDS.

```
      POKE 16388,48
      POKE 16389,117
      NEW
```

THIS WILL SET THE RAMTOP TO 30000 AND AFTER THE PROGRAM HAS BEEN RUN IT WILL BE SAFE EVEN THOUGH YOU MAY DO A NEW OR ANOTHER LOAD. NOTE THE RAND USR NUMBERS FOR SCROLLING DOWN, LEFT AND RIGHT ARE LOCATED AT 30000, 30019 AND 30039 RESPECTIVELY. TO SAVE A COPY OF THIS PROGRAM USE THE COMMAND GOTO 9995

```
   1 REM 01D6022A0C4009545D01B50
22A0C4009EDB8C92A104006191E002B7
EFE762804735F18F610F2C92A0C40061
71E00237EFE762804735F18F610F2C9
   2 FOR N=1 TO 118 STEO 2
   3 LET A=(PEEK (16513+N))-28
   4 LET AA=(PEEK (16514+N))-28
   5 LET AAA=(16*A)+AA
   6 POKE (29999+((N+1)/2)),AAA
   8 NEXT N
   9 SLOW
  15 FOR N=0 TO 255
  20 PRINT CHR$ N;
  30 NEXT N
  40 LET B$=INKEY$
  50 IF B$="5" THEN RAND USR 300
19
  60 IF B$="8" THEN RAND USR 300
39
  70 IF B$="7" THEN SCROLL
  75 IF B$="7" THEN PRINT "
                              "

  80 IF B$="6" THEN PRINT AT USR
30000,0;"
          "

  90 GOTO 40
9995 SAVE "4*SCROLL"
9998 FAST
9999 RUN
```

FADE AWAY

THIS PROGRAM WAS TAKEN DIRECTLY FROM THE APRIL ISSUE OF "YOUR SINCLAIR" BY ANDY PENNELL. IT IS DESIGNED FOR EITHER THE 2068 OR THE SPECTRUM. AFTER A PRESET PERIOD OF TIME THE SCREEN WILL BLACKEN THUS PREVENTING BURNING IN OF AN IMAGE ON YOUR T.V. SCREEN. YOU CAN SET THE TIME FROM ANY PERIOD FROM ONE SECOND UP TO 20 MINUTES. THE SCREEN WILL RETURN TO ITS NORMAL STATE AS SOON AS YOU TOUCH ANY KEY.

```
   5 RESTORE
  10 CLEAR 64198
1000 FOR I=64967 TO 65023
1010 READ A: POKE I,A
1020 NEXT I
1030 FOR I=65281 TO 65365
1040 READ A: POKE I,A
1050 NEXT I
1060 INPUT "DELAY IN SECONDS IS
";S
1070 LET S=S*50: LET T=INT (S/25
6)
1080 POKE 65287,T: POKE 65286,S-
256*T
1090 RANDOMIZE USR 64967
1100 PRINT "USR 64994 TO SWITCH
OFF"
2000 DATA 33,0,254,6,0,243
2010 DATA 54,253,35,16,251,54
2020 DATA 253,62,254,237,71,237
2030 DATA 94,251,33,1,0,34
2040 DATA 251,253,201,237,86,201
2030 DATA 94,251,33,1,0,34
2040 DATA 251,253,201,237,86,201
2050 DATA 255,243,245,229,197,21
3
2060 DATA 237,91,251,253,205,1
2070 DATA 255,34,251,253,209,193
2080 DATA 225,241,251,201,2,0
2090 DATA 195,229,253
2100 DATA 122,179,40,50,33,232
2110 DATA 3,167,237,82,40,11
2120 DATA 235,35,253,203,1,110
2130 DATA 200,33,1,0,201,33
2140 DATA 0,88,17,199,250,1
2150 DATA 0,3,126,18,54,0
2160 DATA 35,19,11,120,177,32
2170 DATA 245,211,254,62,184,50
2180 DATA 255,90,3,0,0,201
2190 DATA 235,253,203,1,110,200
2200 DATA 33,199,250,17,0,88
2210 DATA 1,0,3,237,176,58
2220 DATA 72,92,230,56,15,15
2230 DATA 15,211,254,33,1,0,201
```

Program Listing

Ottawa Timex-Sinclair Users Group

Library

February 27, 1986.

TS 1000 (ZX81)

Title of Program	Ctte No.
1. Alien treasure	010
2. Alphabetic sort	028
3. Artillery range	008
4. Auto record	012
5. Bibliographic Cat. System	011
6. Biorhythm	006
7. Bit Error rate	032
8. Bit Error rate	004
9. Calculus derivative	032
10. Calculus derivative	026
11. Cassette labeler	036
12. Cryptogram	013
13. Data string	020
14. Electronic A	024
15. Electronic A	027
16. Error function (ERF) ...	032
17. Error function (ERF) ...	004
18. ESP Tester	029
19. Factorielle [text Eng/Fr]	032
20. Graphics coder	016
21. Hex converter	003
22. Kitchen sync	019
23. Language tutor	030
24. Letter count	013
25. Letter swap	013
26. Linear regression	040
27. Lottery	018
28. Luner lander	006
29. Machine code introduction	001
30. Magic square	007
31. Memory status	021
32. Microball	009
33. Mortgage calculations	014
34. Nest egg	007
35. Numérologie [text in French]	005
36. Rail fence	013
37. Spy	013
38. Star trek	002
39. Statistics C	026
40. Statistics program	032
41. Tarot	005
42. Tramps -- Decipher	013
43. Tramps -- Encipher	013
44. Vacuum tube triode	027
45. Vigenère	013
46. Vocabulary drill	028
47. Voltage op amp driven	025
48. Yagi antenna	023
49. ZX Forth	015

TS 2000 (Spectrum)

Title of Program	Ctte No.
1. Block font	034
2. Caratères au carre	034

TS 2068

Title of Program	Ctte No.
1. Biorhythm	022
2. Blackjack	039
3. Colomnar tramp cryptogram	033
4. Colomnar tramp matrix table	033
5. Death race	039
6. Demolition	039
7. Derby day	039
8. First loader	035
9. First loader source code	035
10. G4INP morse aid	017
11. Golf	039
12. HF promulgation	017
13. Hi-res graphics	038
14. Julian date	041
15. Language tutor 2068	031
16. LMT-LST [Astronomy program]	041
17. Railfence cryptogram	033
18. Spy	033
19. Tarot	037

Note: For those who own the 2068 version of Vu-File a more detailed listing of these programs is held in data tape form in the library.

ZX-81 **PROGRAMMING** Tips **and** Topics

by
BILL HARMER

It is hard to believe, but our ZX-81/TS1000 computers are powerful tools and the most important thing about them is that we have a computer for our own use. The difference between having a computer and not having one is much more significant, even crucial, compared to the much less important difference between having a $69 computer and having a $6900 computer.

How can the performance of our computer duplicate the features of machines costing one hundred times more? By several simple principles. What a machine with greater sophistication or more bit capacity can do in parallel, our machine can duplicate in series often with only a small penalty in speed. And what an expensive machine can do quickly our machine can do too only taking a little more time (and as hobbyists our time is free).

One game in town played by salesmen and teenagers, who have just recently learned the significance of counting and comparing numbers (but have not yet learned that a number alone can be totally misleading), is the great memory numbers game. The ZX-81/TS1000 have only 1 or 2K of memory. An IBM or brand X has 256K. Conclusion, the ZX-81/TS1000 is only 1% as useful as brand X, right? Wrong! The bigger computers are great memory wasters. The IBM PCjr and the Tandy 1000 use 32K of memory for screen purposes only (thus lost to the user); while in the ZX-81 the screen memory takes up only a fraction of 1K. Programs like the California style icon (picture and mouse) type used on the Tandy 1000 and Apple MacIntosh use 100's of K of memory to do the same thing that a non-icon program can do in 10K. Of course its detractors forget that the ZX-81/TS1000 can be expanded to 16K or 56K (using the 64K memory) of usable memory, with memory expansion modules. It should be noted that the Commodore 64 has only about 38K of usable memory and the Commodore 128 uses the top 64K (bank switched) only for array data or infrequently used items due to the complexities of bank switching where only 64K of memory can be used at one time. So, the ZX-81/TS1000 with a 64K memory pack has more usable memory than a Commodore 64!

Now, down to practical tips in memory saving. There are two different ways to maximize your memory with the ZX-81/TS1000 (assuming that you have already added the 16K memory expansion). One reason that many commercial programs take up so much memory on other computers is that they are really a bunch of seperate programs gathered into one by a menu. With the ZX-81/TS1000 if you operate a file or database program separately from a spreadsheet program and that separately from a computational program, except for the time spent loading the separate programs, your computer can do the same as the larger computers and as it is even possible to run two ZX-81/TS1000 computers side-by-side at the same time, each running different programs. Breaking up your programs allows your computer to do the same things as the expensive models.

Another way to maximize memory size is by using a disk drive. A disk can store hundreds of K of memory items and your program can call these items of data, etc., from the disk as needed and write the results back on to the disk instead of tying up computer RAM. Disk drives are presently available for the ZX-81/TS1000 and soon may be available locally as well as by mail order.

One way to speed up your programs is to bunch your calculations into one sequence of lines in the computer and precede them with a FAST, and follow them with a SLOW command. This can save valuable time as a FOR..NEXT loop running from X=1 TO 10000, as an example, a time-consuming program takes only 40 sec. in FAST mode; but, 4 1/2 minutes in regular SLOW mode. Another trick is to perform operations on input items such as array entries or any items that have to be checked for errors or converted into another form or a calculation made on each item, as the items are entered (when the time to do the operations is negligible compared to the time taken to keyboard and input the items) rather than doing this on all the data at once at a later time.

<u>PROGRAMMING TIP</u>- GOSUBS cannot be used as one GOSUB called from within another GOSUB more than once without throwing the computer off. The solution is to substitute GOTO for GOSUB. In some cases the sub-routine may be called for from different parts of the program and a straight GOTO won't work. In that case try:

```
  10 LET A=30
  20 GOTO 1000
  30 REM Next Statement
       ...
1000 REM Subroutine Here
       ...
1999 GOTO A
```

This would substitute for:

```
  10 GOSUB 1000
       ...
1000 REM Subroutine Here
       ...
1999 RETURN
```

<u>PROGRAMMING TIP</u>- When using a PRINT AT to print different numbers, one after the other, on the same space (as with displaying numbers input into an array) always remember to blank out the space before printing the new number. E.g.

```
 5 DIM D(10)
10 FOR X=1 TO 10
20 INPUT D(X)
30 PRINT AT 9,0;"    (32 blank spaces here)   "
40 PRINT AT 9,0;D(X)
50 NEXT X
60 STOP
```

Without the line 30 blanking, if you input 1000 it will print on the screen (echo on the screen to confirm the number input), 1000. Then enter the number 2. Instead of printing 2 you will see on the screen 2000!

```
   5 REM V.PR 7,PRAYER.B2,WEEKLY
  CYCLE OF PRAYER REQUESTS,A PUB-
  LIC DOMAIN PROGRAM BY BILL
  HARMER,OTTAWA,  1986
  10 REM WHEN FIRST ENTERING
PROGRAM OR AFTER PRESSING RUN BY
MISTAKE YOU MUST GOTO 9100 AND
CHANGE LINE 9145 TEMPORARILY
FIRST
  20 REM GOTO 1 WILL START PRO-
GRAM AFTER BREAK HAS BEEN PRESS-
ED NEVER PRESS RUN OR DATA WILL
BE LOST
  30 REM ENTER GOTO 1000 TO SAVE
 100 PRINT AT 6,0;"           PRAYE
R REQUESTS";AT 7,0;"          A WE
EKLY CYCLE"
 130 PAUSE 200
 140 CLS
 200 CLS
 205 PRINT "MOVE CURSOR OPPOSITE
 DAY OF WEEKWITH SPACE KEY AND P
RESS ENTER  WHEN IT IS OPPOSITE
TODAY"
 250 PRINT AT 18,3;"S M T W T F
S";AT 19,3;"U O U E H R A";AT 20
,3;"N N E D U I T";AT 21,3;"
S   R"
 260 INPUT D$
 265 CLS
 270 LET D=(LEN D$)/2
 322 IF INT D<>D OR D>7 THEN CLS

 325 IF INT D<>D AND D>1 AND D<8
 THEN PRINT "THE CURSOR WAS BETW
EEN TWO DAYS TRY AGAIN"
 330 IF D>7 THEN PRINT "THE CURS
OR WAS MOVED TOO FAR"
 340 IF D=0 THEN PRINT "THE CURS
OR WAS NOT MOVED,OR NOT MOVED EN
OUGH,OR MOVED BY ARROW  KEYS INS
TEAD OF BY SPACE KEY AS IS NECES
SARY"
 350 IF INT D<>D OR D>7 OR D=0 T
HEN GOTO 200
 380 PRINT "PRAYER REQUESTS FOR
";
 390 IF D=1 THEN PRINT "SUNDAY"
 395 IF D=2 THEN PRINT "MONDAY"
 400 IF D=3 THEN PRINT "TUESDAY"
 405 IF D=4 THEN PRINT "WEDNESDA
Y"
 410 IF D=5 THEN PRINT "THURSDAY
"
 415 IF D=6 THEN PRINT "FRIDAY"
 420 IF D=7 THEN PRINT "SATURDAY
"
 425 PRINT
 430 FOR X=1 TO 10
 440 PRINT X;".";
 450 IF D=1 THEN PRINT S$(X)
 460 IF D=2 THEN PRINT M$(X)
 470 IF D=3 THEN PRINT T$(X)
 480 IF D=4 THEN PRINT W$(X)
 490 IF D=5 THEN PRINT H$(X)
 500 IF D=6 THEN PRINT F$(X)
 510 IF D=7 THEN PRINT A$(X)
 520 NEXT X
 600 PRINT AT 19,0;"ENTER ""E""
TO ENTER NEW ITEM,""D"" TO GO TO
 NEW DAY OR ""M"" TO GO TOMENU"
 610 INPUT R$
 615 IF R$="D" OR R$="DAY" THEN
GOTO 200
 620 IF R$="E" OR R$="ENTER" THE
N GOTO 700
 625 IF R$="M" OR R$="MENU" THEN
 GOTO 1000
 630 GOTO 100
```

```
 700 PRINT AT 19,0;"WANT TO MAKE
 ENTRIES STARTING ATLINE?(ENTER
LINE NO.)                       "
 710 INPUT S
 715 FOR X=S TO 10
 720 PRINT AT 19,0;"ENTER PRAYER
 REQUEST NOW FOR     STARTING LIN
E ";X;"
  "
 722 INPUT I$
 723 IF LEN I$<=16 THEN PRINT AT
 X+1,0;X;".";I$
 724 IF LEN I$>16 THEN PRINT AT
X+1,0;X;".";I$(1 TO 16)
 750 IF D=1 THEN LET S$(X)=I$
 760 IF D=2 THEN LET M$(X)=I$
 770 IF D=3 THEN LET T$(X)=I$
 780 IF D=4 THEN LET W$(X)=I$
 790 IF D=5 THEN LET H$(X)=I$
 800 IF D=6 THEN LET F$(X)=I$
 810 IF D=7 THEN LET A$(X)=I$
 820 NEXT X
 830 CLS
1000 REM MENU ROUTINE
1010 CLS
1020 PRINT "                  MENU"
1030 PRINT
1040 PRINT "1-ENTER MAIN PROGRAM
"
1050 PRINT
1060 PRINT "2-SAVE UPDATED PRAYE
R LIST        (CASSETTE)"
1070 PRINT
1080 PRINT "3-COPY PROGRAM (CASS
ETTE)"
1085 PRINT
1090 PRINT "4-SAVE UPDATED ON DI
SK (LARKEN     ZX-81 DISK)"
1140 PRINT AT 20,0;"ENTER THE NU
MBER OF YOUR CHOICE"
1150 INPUT M
1155 CLS
1160 IF M=1 THEN GOTO 380
1170 IF M=2 THEN GOTO 9000
1180 IF M=3 THEN GOTO 9100
1190 IF M=4 THEN GOTO 9200
1200 GOTO 1000
9000 REM SAVE ROUTINE
9002 CLS
9005 PRINT "[illegible]
[illegible]"
9007 PAUSE 350
9010 SAVE "PRAYER"
9015 CLS
9020 GOTO 10
9100 REM DIM STATEMENTS TO SET
UP ARRAYS
9115 DIM S$(10,16)
9120 DIM M$(10,16)
9125 DIM T$(10,16)
9130 DIM W$(10,16)
9135 DIM H$(10,16)
9140 DIM A$(10,16)
9142 REM PUT IN LINE 9145 WHEN
CLEARING DATA IN PROGRAM OR
RESTARTING AFTER PRESSING RUN,
THEN ENTER RUN 9100
9145 REM STOP
9150 GOTO 9002
9200 REM DISK SAVE
9210 PRINT USR 14336
9230 REM SAVE"PRDATA.B1"
9235 CLS
9240 SLOW
9250 GOTO 1
9500 REM DISK COPY ROUTINE
9510 PRINT USR 14336
9520 REM SAVE"PRAYER.B2"
9530 SLOW
9540 CLS
9550 GOTO 1
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NEW SINCLAIR COMPUTER

The new owners of Sinclair are going ahead apparently with a new computer that had been developed before the takeover of Sinclair. It is a SUPER SPECTRUM! It will be compatible with all current SPECTRUM software yet has an optional mode which doubles its speed. This is done by using the new Z-80H microprocessor instead of the Z-80A used now in the ZX-81, TS2068, and SPECTRUM, a micro- processor that runs at twice the clock speed of the Z-80A. Other methods are also used to improve the speed of execution of programs beyond what could be expected by merely doubling the clock speed. In addition, the computer has 128K of RAM (Random Access Memory) built in as well as a built-in cassette deck. Price of the computer will be initially 200 pounds or about $440 CDN. However, due to the commitment of the company to push the machine really hard, the price might be expected to come down in time and possibly a U.S. version will appear in Canada. This machine will, apparently, supplant the slow-to-catch-on but highly rated Sinclair QL, a 32/8 bit machine compared to the 8/8 bit architecture of the Z-80 family of microprocessors used in all other Sinclair computers.

Your View Review

PRODUCTS: C.ITOH "Prowriter"
TASMAN Printer Interface

I found a need to have a larger scale printer than the 2040 printer,so I went shopping for a printer and interface. I had become familiar with Tasman products by using their word processor Tasword II and was impressed with their product. So I figured that they would also make a good parallel interface. I ordered one thru Thoughts & Crosses in England.

I had also been impressed by the "Prowriter Jr." that John Mathewson had brought into one of the users group meetings. He mentioned that he had bought it at Dalburg Peripherals. I thought it would be a good place to start looking for a printer. I gave them a call and asked if I could get some details about their lower priced printers and if they could send me some printed material on the "Prowriter Jr." and the "Prowriter" by C.ITOH. A couple of days later in the mail I received an envelope containing a letter and printer specifications along with a print sample and price list for both printers. ....cont'd

I was plesantly surprised by the output in the print samples that had been sent along. Speicifcations were as follows:

- 105 Characters per second (non-compressed mode)
- UNI or BI-directional printing
- Print Modes: Normal, Compressed, Emphasized, Double Strike, Superscript, Subscript, Double Width, and Underline
- Sprocket or Frictio feed
- Variable linefeeds and Forms length
- 4 inches up to 10 inches wide forms
- Original plus 2 copies
- 54 lines per minute with 100ms linefeeds
- Horizontal Tabs and perforation skip feature
- 2 Character Sets
- Print Head life 100 million Characters or longer
- 2K buffer
- Weight 13.8 lbs.

These secifications were for the "Prowriter" which is slighly faster than the "Prowriter Jr."

Well my Tasman Centronics Interface arrived a few weeks after ordering it, and I had made up my mind that at $367.00 for both the "Prowriter" and "Prowriter Jr." that I would go for the former.

It did not take too long to figure out the printer codes, due to the well written manuals that accompanied both items. As you can see by this issue that the results so far have been very good and I would recommed the C. ITOH "Prowriter" to all that ask.

Alan Moore